

The Claims

What is claimed is:

- 5 1. A burner comprising a swirl generator unit and means for introducing fuel into a combustion air stream,
 the swirl generator unit comprising a swirl generator having at least one combustion-air inlet opening for the combustion air stream, and surrounding an internal burner space, and
10 the means for introducing fuel comprising at least one first fuel feed having a group of first fuel outlet openings arranged radially outside the swirl generator unit,
 wherein the swirl generator unit, at a combustion chamber-side end, has at least one inlet opening that at least partially surrounds periphery of the swirl generator
15 unit, and
 wherein the fuel outlet openings in the region of the inlet opening are arranged radially outside the swirl generator unit so that fuel communicates with the internal burner space through the inlet opening.
- 20 2. The burner of claim 1, wherein the group of first fuel outlet openings is arranged in a row around a burner axis.
3. The burner of claim 1, wherein outlet passages formed by the first fuel outlet openings are disposed along passage axes and are arranged at an angle such
25 that the passage axes intersect at a point on a burner axis downstream of the burner.
4. The burner of claim 1, wherein outlet passages formed by the first fuel outlet openings are disposed along passage axes and are arranged at angles with
30 respect to a burner axis such that the passage axes of different subgroups of the first fuel outlet openings intersect at various points downstream of the burner.

5. The burner of claim 1, wherein the swirl generator and the at least one first fuel feed are integrally formed, then separated after being formed, and then joined together.

5 6. The burner of claim 1, wherein the fuel feeds are connected to the swirl generator unit via connecting lugs.

7. The burner of claim 6, wherein the fuel feeds are connected to the swirl generator unit only at the combustion chamber-side end of the swirl generator unit.

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8. The burner of claim 1, wherein a fuel lance projects from a side of the swirl generator unit that is remote from the combustion chamber into the internal space of the burner and is arranged on a burner axis.

15 9. The burner of claim 1, wherein at least one second fuel feed having a group of second fuel outlet openings is arranged substantially along a direction of a burner axis, and is provided at the swirl generator.

20 10. The burner of claim 9, wherein the at least one first fuel feed is configured with a cross-section permitting volumetric flow to be several times higher than in the at least one second fuel feed.

25 11. The burner of claim 9, wherein an inner body is arranged in an internal volume of the burner, the second fuel outlet openings of at least one second fuel feed being arranged on the inner body substantially along a direction of a burner axis.

12. The burner of claim 9, further comprising means for independently controlling a premix fuel feed to the first and second fuel feeds.

30 13. The burner of claim 1, wherein the swirl generator is configured as a swirl grating.

14. The burner of claim 1, wherein the at least one combustion-air inlet opening comprises tangential inlet slots disposed substantially in the direction of a burner axis.

5 15. The burner of claim 14, wherein a second fuel feed having a group of second fuel outlet openings is arranged along each inlet slot.

16. The burner of claim 1, wherein the at least one inlet opening comprises a slot.

10 17. The burner of claim 1, wherein the swirl generator and the at least one first fuel feed are integrally formed by casting, then separated after being formed, and then joined together.

15 18. A gas turbine comprising:
at least one burner comprising a swirl generator unit and means for introducing fuel into a combustion air stream,

the swirl generator unit comprising a swirl generator having at least one combustion-air inlet opening for the combustion air stream, and surrounding an internal
20 burner space, and

the means for introducing fuel comprising at least one first fuel feed having a group of first fuel outlet openings arranged radially outside the swirl generator unit,

25 wherein the swirl generator unit, at a combustion chamber-side end, has at least one inlet opening that at least partially surrounds periphery of the swirl generator unit, and

wherein the fuel outlet openings in the region of the inlet opening are arranged radially outside the swirl generator unit so that fuel communicates with the internal burner space through the inlet opening.